



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

October 21, 2011

TO: Michael Montgomery, Assistant Director  
Federal Facilities & Site Cleanup Branch (SFD8)  
Superfund Division

THRU: John Chesnutt, Section Chief *gc*  
Navy & Army Section (SFD8-3)  
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SUBJECT: EE/CA Approval Memorandum for Proposed Non-Time Critical Removal  
Action at Yosemite Creek Sediment Site

The purpose of this memorandum is to request approval to proceed with an Engineering Evaluation/Cost Analysis (EE/CA) for a non-time critical removal action for contaminated sediments at the Yosemite Creek Sediment Site (Site) located near the intersection of Yosemite Avenue and Hawes Street, San Francisco, California (Figure 1).

At this time, the Environmental Protection Agency (EPA) is planning to prepare the EE/CA report. EPA anticipates the Site potentially responsible parties (PRPs) will implement the removal work selected in the EE/CA with EPA oversight.

### I. Site Background

The Yosemite Creek Sediment Site consists of contaminated sediments within and near Yosemite Slough. Yosemite Slough is tidally influenced and is located within the south bay basin portion of San Francisco Bay. Per the Basin Plan for the California Regional Water Quality Control Board, beneficial uses of the south bay basin include a variety of human consumptive uses, aquatic life, wildlife and recreational uses. The slough is approximately 1,600 feet long and 200 feet wide with an area of 320,000 square feet and it is located within the Yosemite Creek watershed drainage basin.

Before 1900, the area around the Site consisted primarily of wetlands, marshland, or land submerged below the mean tide level. Between 1940 and 1970, much of the surrounding area underwent residential, commercial, and industrial development. The Site historically received sewage and stormwater overflows and stormwater runoff. At low tide, the sediments over a majority of the slough are exposed. Previous investigations have shown the Site sediments to be contaminated by PCBs, metals including chromium, lead, mercury, and zinc, petroleum hydrocarbons, and pesticides including chlordane, dieldrin, and DDT.

Land surrounding the slough currently consists of abandoned and degraded former industrial properties including deteriorating buildings and warehouses, old pavement, and debris areas. The Candlestick Point State Recreational Area surrounds Yosemite Slough. In addition to ecological habitat restoration, the General Plan for this State park identifies the facilities that could be developed within park boundaries including:

- Trails for hiking, biking, jogging,
- Group and family picnic areas
- Group campgrounds
- Fishing piers
- Non-powered boat rental
- Wind surfing facilities
- Boating center
- Sand beach
- Cultural program center

In June of 2011, the California State Parks Department broke ground of its Yosemite Slough Wetland Restoration Project, Phase I, North Side. This total project which is part of the planned development the Candlestick Point State Recreational Area will create 12 acres of new wetland habitat with 7 acres on the north side of Yosemite Slough and 5 acres of wetlands on the south side. Phase I includes site clearing and removal of debris, soil clean up and remediation, excavation, grading and planting. Phase II includes restoration of the south side of the slough. Phase III of the project will include capital improvements to the site such as utilities, roads, trails, interpretive signage, bathrooms and a new interpretive center.

## **II. Threat to Public Health, Welfare, or the Environment**

In 2009, EPA collected and analyzed 191 sediments samples (including duplicates) from 36 locations at depths of 0 to 5 feet throughout the slough. Primary hazardous substances found in Site sediments are summarized in Table 1.

Table 1: Summary of Maximum Concentrations of Primary Contaminants.

Compound	Comparison Value (1)	Maximum Concentration
PCB; Aroclor-1254	180 ppb	130,000 ppb
PCB; Aroclor-1260	180 ppb	26,000 ppb
PCB Congeners	180 ppb	34,368 ppb
TPH-diesel	180 ppm	5,900 ppm
TPH-motor oil	2,500 ppm	9,100 ppm
Lead	218 ppm	796 ppm
Mercury	0.71 ppm	1.70 ppm

Source: Yosemite Creek Sediment Removal Assessment Report; Final; May 2011

(1) For PCBs and Metals, the comparison value was reported as Effects Range - Median Levels or ER-M. For Total Petroleum Hydrocarbon (TPH), the comparison value was reported as the California Regional Water Quality Control Board Environmental Screening Level (ESL).

Pesticides were not detected or reported in the May 2011 report but are believed to be present and collocated with the PCB contamination and were likely masked by the high PCB contamination during sediment sample analysis. A 2004 Battelle report reported maximum concentrations of Chlordane (88 ppb), Dieldrin (110 ppb), and DDT (142 ppb) in slough sediments. Figure 2 presents a depth contour profile for the primary Site contaminant, PCB Aroclor-1254.

Sources of releases of hazardous substances, pollutants or contaminants into the slough include, but are not limited to, numerous wet weather sewer system overflows from City of San Francisco storm sewers. In 1991, the City of San Francisco completed construction of overflow retention and storage basins for its combined sewer system. The upgrade has dramatically reduced the number of system overflows to the slough to an average of one per year. Releases from the Bay Area Drum site, a nearby drum recycling facility which discharged PCBs, TPH, and other contaminants to City storm sewers from the 1940's to 1987, is thought to be a primary source of contaminants in the slough. The Bay Area Drum site was cleaned up under California Department of Substances Control oversight.

The primary risks presented by Site contamination are potential impacts to marine organisms, including plant and animals receptors that live in, near or periodically visit the slough. Human exposure pathways to Site contaminants may be present via accumulations of contaminants (e.g. PCBs) in the food chain (e.g. consumption of fish and shellfish). Local residents have been known to fish within and near the Yosemite Slough. In addition, the State Parks implementation of its Yosemite Slough Wetlands Restoration Project will attract additional ecological and human activity near and in the slough.

As described in Figure 2, contaminant concentrations in surface sediments remain elevated and therefore the exposure pathway to ecological and human receptors are and will remain complete without a response action in the slough. Sewer infrastructure improvement in the Yosemite Creek watershed has reduced total suspend solid loading to the slough and

therefore has reduced deposition of sediments over the contaminated sediment layers in the slough. Bioaccumulation data shows elevated concentrations of chlorinated hydrocarbons in clams exposed to slough sediments. Based on surface sediment PCB concentrations, accumulations of PCBs in fish tissue could likely reach 1300 ppb, an unsafe concentration for all higher order predators in the food web.

If this removal action is not taken, certain cleanup work at the adjacent Hunters Point Naval Shipyard (HPNS) National Priority List site may be delayed. Sediment contamination in Yosemite Slough is upgradient of sediment contamination in HPNS Parcel F and planned wetlands restoration work in Parcel E-2. Navy representatives have stated that, pursuant to Navy policy, the Navy is not allowed to remediate Navy contamination while an active upgradient source exists. Navy staff has specifically stated that the Navy's cleanup in portions of Parcel F and Parcel E-2 may be delayed until upgradient contaminant sources in Yosemite Slough are addressed.

### **III. Statutory Basis for Action**

The information presented in this memorandum indicates that actual or threatened releases of hazardous substances from the Yosemite Creek Sediment Site may present an imminent and substantial endangerment to public health and the environment. Through this proposed cleanup action, EPA will minimize and further reduce potential harm to public health and the environment.

### **IV. Factors for Determining Appropriateness of a Removal Action**

Section 300.415(b)(2) of the National Contingency Plan (NCP) provides factors for determining the appropriateness of a removal action. The factor most applicable to current conditions at Yosemite Slough are the actual or potential contamination of sensitive ecosystems. Other factors that may be applicable include: high levels of hazardous substances (e.g. PCBs) in soils largely at or near the surface that may migrate; and actual or potential exposure to nearby human populations or the food chain from hazardous substances or pollutants.

In accordance with 300.415(b)(4) of the NCP, EPA has determined that a planning period of at least six months exists before on-site activities could be initiated; therefore, an EE/CA must be conducted for a non-time critical removal action.

### **V. Enforcement/Proposed Actions/Cost Estimates**

In coordination with Site PRPs and with input from other stakeholders, EPA will prepare the EE/CA and EPA will issue an Action Memorandum memorializing the selection of a removal response action. In accordance with Agency policy, EPA will endeavor to address this Site through a PRP performed response action using an appropriate enforcement mechanism (See Enforcement Confidential Addendum).

EPA anticipates evaluating a full range of removal response alternatives in the EE/CA including tidal control and excavation, dredging, capping, and monitored natural recovery. Habitat restoration will likely be included in one or more alternatives.

Currently, EPA estimates that the cost of these various removal responses could range from five to twenty million dollars. Detailed cost estimates will be presented and documented in the EE/CA.

## **VI. Public Involvement**

An EPA Community Involvement Coordinator (CIC) has been assigned to the Site. The CIC, in coordination with the Site RPMs, will conduct community interviews. Pursuant to 40 CFR 300.415(m), a Community Involvement Plan (CIP) will be issued prior to finalization of the EE/CA. EPA will establish an information repository for the EE/CA and use the EPA Region 9 website to facilitate the transfer of Site information to the public.

## **VII. Approval/Disapproval**

The conditions at the Yosemite Creek Sediment Site meet the NCP criteria for a removal action. Therefore, I am requesting approval to proceed with an EE/CA. Your approval or disapproval should be indicated below.

Approve: \_\_\_\_\_

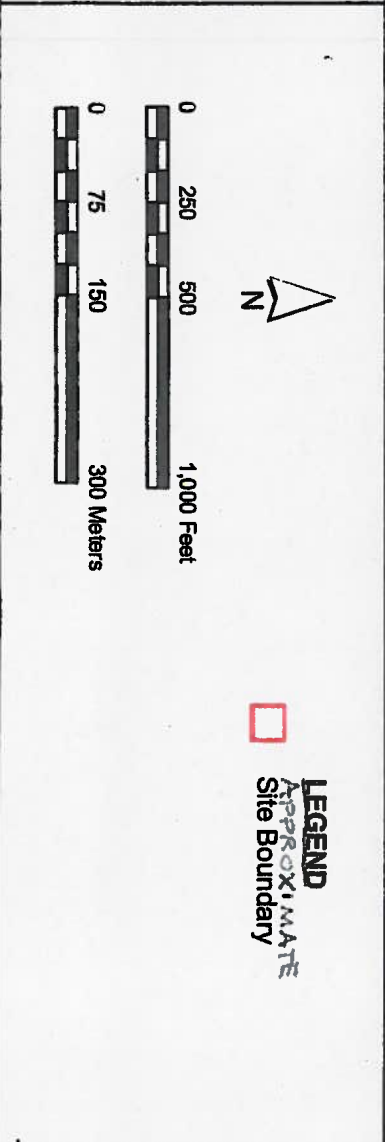
Date: \_\_\_\_\_

*Oct. 27<sup>th</sup>, 2011*

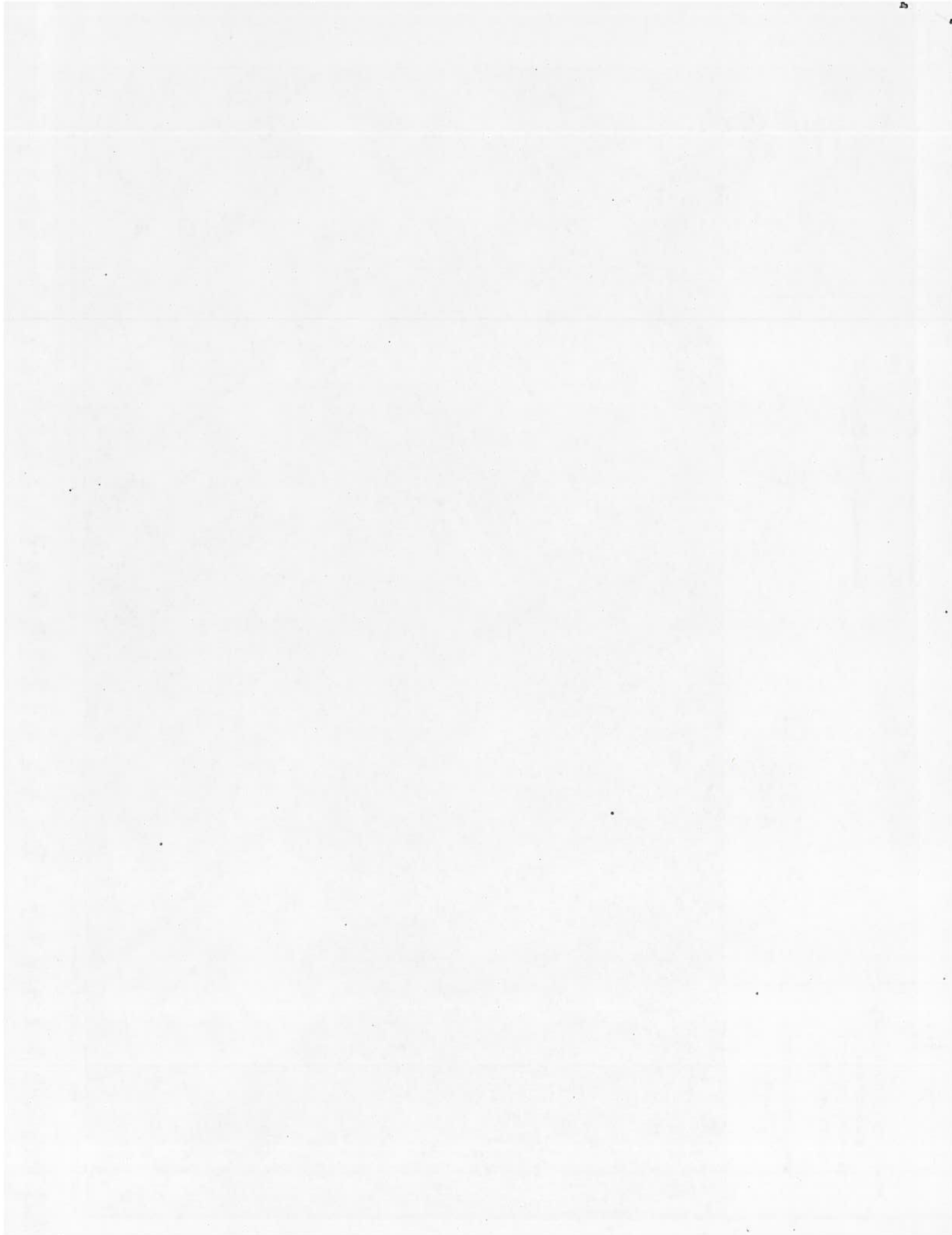
Disapprove: \_\_\_\_\_

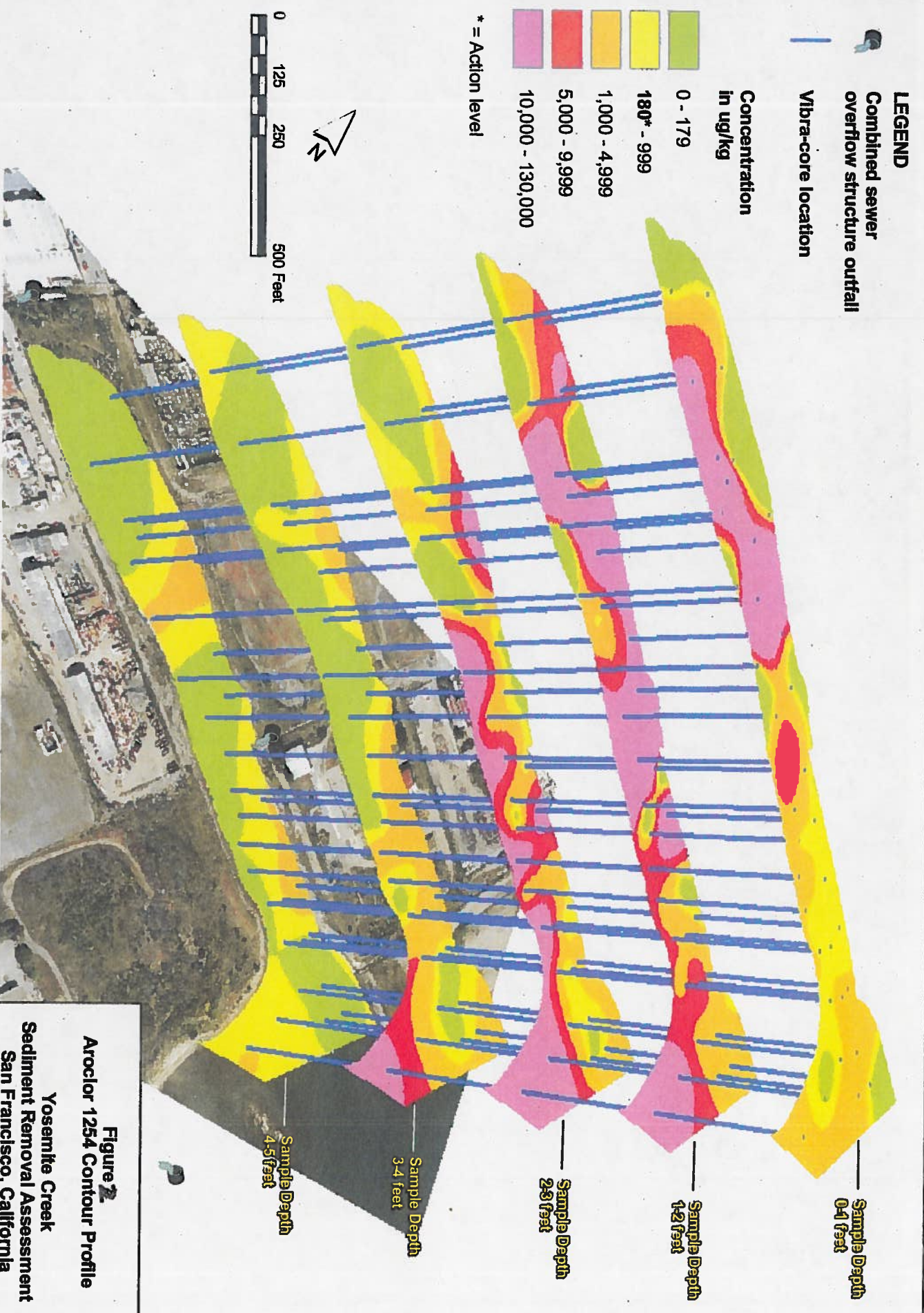
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**Figure 2**  
**Site Location Map**  
Yosemite Creek  
Sediment Removal  
Assessment  
San Francisco, California





**Figure 2.**  
**Arcolor 1254 Contour Profile**  
**Yosemite Creek**  
**Sediment Removal Assessment**  
**San Francisco, California**

